TECHNICAL DATA SHEET

Mains power protection

ESP 240CDT2 Compact Surge Protection Series

furse



LPZ 1→2 | COMMON MODE Equipotential Bonding | MAINS TYPE 2 | REPLACEABLE PROTECTION MODULE | STATUS INDICATION + VOLT-FREE CONTACT

Type 2 /Class II tested compact Surge Protective Device SPD (to BS EN/IEC 61643) for use on the sub-distribution board. For use at boundaries up to LPZ 1 through to LPZ 2 to protect electrical equipment from damage.

Features & benefits

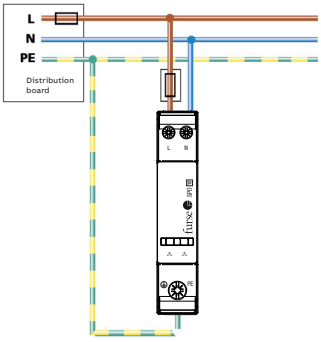
- Repeated protection in lightning intense environments
- Pluggable module design allows for simple replacement at end-of-life
- Ultra compact, space saving design to fit within distribution panel boards and Electric Vehicle EV charging stations
- Indicator shows when the SPD protection modules requires replacement
- Remote signal contact can indicate the protector's status through interfacing with a building management system
- Innovative locking DIN rail clip allows easy SPD positioning then securing

Application

- Use on single phase mains supplies and power distribution systems for protection against indirect lightning strikes
- ESP 240CDT2/40/TNS and ESP 240CDT2/40/TT versions also cover TN-C-S earthing systems

Installation

The SPD is to be installed in the sub-distribution board with connecting leads of minimal length. The protector should be fused and is suitable for attachment to a 35 mm top hat DIN rail. The diagrams below illustrate how to wire the appropriate ESP protector according to your chosen electrical system.



NOTE: Remote contact connections not shown, for clarity.

Weatherproof enclosure:
WBX D4
ABB order code:
7TCA085410R0032

Metallic enclosure:
MBX D4
7TCA085400R0649

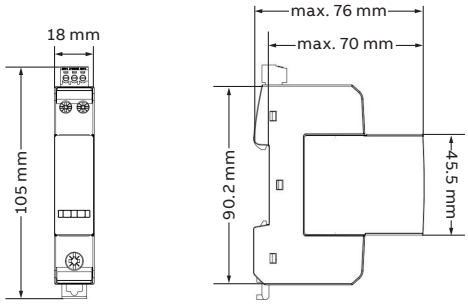
SPD replacement modules:
ESP 240CDT2/40/M
7TCA085460R0425
ESP 240CDT2/40/TT/M
7TCA085460R0426

IMPORTANT: In order to protect sensitive electronic equipment, particularly from electrical switching transients, plus ensure the continual operation of systems, full mode SPDs, with both common and differential mode protection, are required. ESP M1 Series or ESP D1 Series SPDs should be installed at sub-distribution boards feeding sensitive equipment. For further information, please refer to the Furse Guide to BS EN 62305 Protection against lightning.

ESP 240CDT2 Surge Protection Series - Technical specification

Electrical specification	ESP 240CDT2/40/TNS	ESP 240CDT2/40/TT
ABB order code	7TCA085460R0424	7TCA085460R0423
Nominal voltage - Phase-Neutral U_o (RMS)	240 V	
Maximum voltage - Phase-Neutral U_c (RMS)	275 V	
Temporary Overvoltage TOV U_T[1] (5s/120m)	335 V / 440 V	
Short circuit withstand capability I_{SCCR}	25 kA_{RMS} / 50 Hz	
Frequency range	47-63 Hz	
Max. back-up fuse (see installation instructions)	≤ 100 A	
Leakage current (to earth)	≤ 300 µA	≤ 5 µA
Volt free contact:[2]	Screw terminal	
– Current rating	0.5 A	
– Nominal voltage (RMS)	250 V	
Transient specification	**ESP 240CDT2/40/TNS**	**ESP 240CDT2/40/TT**
Type 2 (BS EN/EN), Class II (IEC)		
Nominal discharge current 8/20 µs (per mode) I_n	20 kA	
Let-through voltage U_P at I_n[2]	≤ 1.5 kV	
Maximum discharge current I_{max} (per mode)[3]	40 kA	
Mechanical specification	**ESP 240CDT2/40/TNS**	**ESP 240CDT2/40/TT**
Temperature range	-40 to +80 °C	
Connection type Screw terminal - maximum torque	1.2 Nm	
Conductor size (solid)[5]	10 mm² (L/N), 35 mm² (PE)	
Earth connection	Screw terminal - maximum torque 2.0 Nm	
Degree of protection (IEC 60529)	IP20	
Volt free contact	Screw connection for conductor up to 1.5 mm², rated AC 250 V, 0.5 A, 0.4 Nm Screw Torque	
Case material	Polybutylene terephthalate (PBT)	
Mounting	Indoor, 35 mm top hat DIN rail	
Weight	0.35 kg	0.31 kg
Dimensions to DIN 43880 - HxDxW[4]	90.2 mm x 70 mm x 18 mm* (1TE)	

[1] Temporary Overvoltage TOV rating is for durations of 5 seconds (withstand) and 120 minutes (safe fail) tested to BS EN/IEC 61643. TT versions have 1200V withstand for 200ms (N-E)
[2] The maximum transient voltage let-through of the protector throughout the test, phase to earth, neutral to earth (TNS) and phase to neutral, neutral to earth (TT)
[3] The electrical system, external to the unit, may constrain the actual current rating achieved in a particular installation
[4] The remote signal contact (removable) adds 15 mm to height
[5] Conductor size (flexible) is 6 mm² L/N, 25 mm² PE
* Maximum dimensions (this applies to all dimensions).



Side view

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